California Postsecondary Education Commission

An Update of the Commission's Community College Enrollment Demand Projections by Region

In response to enrollment demand at the California Community Colleges, the Commission has approved five proposals since 2000 to create new community college campuses and off-campus centers. Among the significant findings of this updated report are the following:

- *Based on current space and utilization standards, the community college system might need to expand its physical capacity by as much as 50 percent by year 2013 in order to fully meet enrollment demand;*
- *Although public support for community college capital outlay projects remains high at present, the Commission encourages the system to explore creative mechanisms to expand access in the absence of brick and mortar.*

Contents

The Commission advises the Governor and Legislature on higher education policy and fiscal issues. Its primary focus is to ensure that the state's educational resources are used effectively to provide Californians with postsecondary education opportunities. More information about the Commission is available at www.cpec.ca.gov.

Draft Commission Report

Background

In 2001, the California Postsecondary Education Commission issued an analysis of undergraduate enrollment demand *by region* for the California Community Colleges and the California State University. A similar report, released in 2003, addressed undergraduate demand issues for the University of California.

A principal finding echoed throughout the 2001 community college report was that enrollment demand and resulting classroom capacity pressures would be significant in nearly all geographic regions of the state.

On a statewide basis, the community college report revealed that a deficit of spaces for 315,058 fulltime equivalent students (FTES) would exist by 2010 if the system's physical capacity did not expand appreciably. The report emphasized that even if all of the renovation and modernization projects proposed in the system's 1999 Five-Year Plan were authorized by the State, nearly 43 percent of the deficit would still remain.

Although regional reports have aided state and regional planning efforts, many planners have expressed an interest in obtaining updated community college projections and institutional capacity estimates at a more local level. This present report provides an analysis of community college enrollment demand using 16 rather than 11 regional designations.

The counties of San Bernardino, Riverside, Imperial, and San Diego are now stand-alone regions. In the previous study, San Bernardino and Riverside counties formed a single regional cluster, as did San

DISPLAY 1 Regional CPEC Designations

Diego and Imperial counties. The nine-county San Francisco Bay Area has been disaggregated to form the following geographical areas: (a) San Francisco North Bay Area; (b) San Francisco East Bay Area; (c) San Francisco Peninsula Area; and (d) San Francisco South Bay Area. The 16 regional designations are shown on the map in Display 1.

Enrollment Demand Methodology

2001 Study

The Commission spent several months analyzing historical community college participation rates by region and age-group. Those rates represented the proportion of Californians that were enrolled at a community college during a given Fall term. Because practically all community college students tend to enroll in a community college located in the same region as their home or workplace, it was not necessary to study *out-of-region* rates.

Following discussions with various community college district planners and administrators, the Commission determined which rates should be held constant and which ones should be increased moderately over the projections period. It was observed that the participation rate for the 18-19 age-group continues to be significantly higher than all other rates, with on the average 330 residents in this age cohort group enrolled in a community college per 1,000 residents of the same age-group. The Commission's model assumed that this rate would remain high throughout the projection period.

The participation rate for the 50-65 age-group was held constant because the historical analysis showed little or no change in participation for that age cohort. Participation rates for the remaining age-groups were increased moderately based on observed regional trends. Factors that were presumed to influence increases in community college participation rates included: (a) continued improvement in the state's economy that would boost growth in jobs for which the community colleges are a major provider of workforce training and preparation; (b) continued shift from industrial jobs to service–oriented jobs that will require education beyond high school; (c) the community college's expanded role in remedial education; and (d) strategic planning initiatives that are intended to improve transfer readiness, certificate and licensure completion rates, basic skills acquisition, and welfare to work transition.

Updated Study—Method A

In deriving the updated forecast, the Commission compared its previous regional projections to actual Fall 2000 and 2001enrollments. Fall 2003 was not considered because of the budgetary reductions that occurred during this period, which forced many community colleges to reduce course offerings. On the average, the Commission's projections were within 98 percent of actual enrollments, with a few exceptions: actual enrollments for Los Angeles County were 9 percent above the forecast, and enrollments for Orange County were 17 percent higher. To compensate for these two discrepancies, the Los Angeles County forecast was increased by 9 percent and the Orange County forecast was increased by 17 percent. This correction approach pre-supposes a favorable California economy and a full recovery of enrollment losses that occurred in Fall 2003.

Updated Study—Method B

A more elaborate process was required to update enrollment demand projections for regions that were disaggregated into smaller geographical areas. The process began by observing that the enrollment forecast for the original regional designations were extremely reliable in comparison to actual enrollment levels. Thus, the challenge was to estimate the proportion of enrollment demand for a particular aggregated area that should be attributed to the new smaller regions. For example, how much of the community college demand within the previously designated San Bernardino-Riverside County Region

should be attributed to San Bernardino County, and how much should reasonably be attributed to Riverside County. Appendix A discusses how this was done.

Analysis of Regional Enrollment Demand

This section provides an estimate of the level of community college enrollment demand by region that would be anticipated if state support for higher education and course offerings were at levels observed during the favorable economic period of the late 1990s, and if increases in student fee levels were gradual and predictable. The forecast incorporates trends in regional participation rates, strategic initiatives of the community college system, and public policy objectives of the state.

Display 2 indicates that across all regions the community colleges would have served about 1.79 million students in Fall 2003, and will grow at an annual compounded rate of about 2.64 percent through year 2013 (see Display 2). The projected annual rate of change is shown to be in the +4 percentage point range for Imperial County, Riverside County, and San Bernardino County. The Los Angeles County Region is projected to add over 150,000 additional students, which would account for just over a quarter of the additional 579,729 community college students anticipated between Fall 2002 and Fall 2013. Approximately 87 percent of the total projected demand is due to regional population growth, whereas the remaining numbers are due to moderate increases in community college participation rates that will be discussed later.

Budget constraints limited community college enrollments to approximately 1.65 million students, which translated to a one-year loss of 159,317 students. This single-year loss can be interpreted as *pent-up demand*, since our analysis implies that those students would have enrolled in the community colleges had course sections and offerings been available. Our analysis also implies that those students will gradually return to the colleges. A more practical estimate of the amount of enrollment growth funding needed for the community colleges to fully fund demand can be obtained by comparing the Commission's 2013 regional projections to Fall 2003 actual enrollments. This analysis is highlighted in Display 3 on page 6.

DISPLAY 2 Community College Enrollment Demand by Region, Fall 2002 to Fall 2013

FALL	Total	Northern CA	Sacramento Area	North SF Bay Area	SF East Bay	SF Peninsula	South Bay	North Central Valley	South Central Valley
2002	1,748,549	58,669	98,821	67,248	111,645	93,616	99,143	57,854	85,751
2003	1,793,185	59,869	101,833	69,322	114,400	100,006	95,081	59,676	87,956
2004	1,839,031	61,094	104,938	70,657	116,604	101,932	96,912	61,555	90,218
2005	1,886,121	62,343	108,137	72,018	118,849	103,895	98,779	63,494	92,539
2006	1,934,492	63,618	111,433	73,405	121,138	105,896	100,681	65,494	94,918
2007	1,984,182	64,920	114,830	74,819	123,471	107,935	102,620	67,556	97,360
2008	2,035,227	66,247	118,331	76,260	125,849	110,014	104,596	69,684	99,863
2009	2,087,670	67,602	121,938	77,728	128,273	112,133	106,611	71,878	102,432
2010	2,141,549	68,985	125,655	79,225	130,743	114,292	108,664	74,142	105,066
2011	2,196,908	70,396	129,485	80,751	133,261	116,493	110,757	76,477	107,768
2012	2,253,790	71,836	133,433	82,306	135,828	118,737	112,890	78,886	110,540
2013	2,312,239	73,305	137,500	83,891	138,443	121,023	115,064	81,370	113,382
PCT Change	32.2%	24.9%	39.1%	24.7%	24.0%	29.3%	16.1%	40.6%	32.2%
Numerical Change	563,690	14,636	38,679	16,643	26,798	27,407	15,921	23,516	27,631
Annual Change	2.57%	2.05%	3.05%	2.03%	1.98%	2.36%	1.36%	3.15%	2.57%

DISPLAY 2 (Continued)

FALL	Central Coast	South Coast	LA County	Orange County	Riverside	San Bernardino	San Diego County	Imperial County
2002	42,400	90,041	418,453	218,836	57,185	61,560	179,960	7,367
2003	43,911	92,018	429,894	223,467	59,694	64,104	184,239	7,712
2004	45,477	94,038	441,649	228,197	62,313	66,753	188,621	8,073
2005	47,098	96,103	453,724	233,026	65,047	69,512	193,106	8,451
2006	48,776	98,213	466,130	237,958	67,902	72,384	197,698	8,847
2007	50,515	100,369	478,875	242,994	70,881	75,376	202,399	9,261
2008	52,316	102,573	491,969	248,137	73,991	78,491	207,212	9,695
2009	54,180	104,825	505,420	253,389	77,237	81,735	212,140	10,149
2010	56,112	107,126	519,239	258,751	80,626	85,112	217,185	10,624
2011	58,112	109,478	533,436	264,228	84,164	88,630	222,349	11,122
2012	60,183	111,882	548,022	269,820	87,857	92,292	227,637	11,643
2013	62,328	114,338	563,006	275,530	91,712	96,106	233,050	12,188
PCT Change	47.0%	27.0%	34.5%	25.9%	60.4%	56.1%	29.5%	65.4%
NumericalChange	19,928	24,297	144,553	56,694	34,527	34,546	53,090	4,821
Annual Change	3.56%	2.20%	2.73%	2.12%	4.39%	4.13%	2.38%	4.68%

DISPLAY 3 Estimate of Annual Increase in Funding Needed to Fully Support Projected Community College Enrollment Growth

Region	Actual Fall 2003 Enrollment	Projection Fall 2013 Enrollment	Annual Average PCT Change in Funding Needed For Enrollment Growth
Northern CA	53,607	73,305	3.18%
Sacramento Area	93,781	137,500	3.90%
SF Bay North	65,248	83,891	2.55%
SF East Bay	102,057	138,443	3.10%
SF Bay Peninsula	90,195	121,023	2.98%
South Bay Region	93,535	115,064	2.09%
North Central Valley	55,539	81,370	3.89%
South Central Valley	82,092	113,382	3.28%
Central Coast	38,467	62,328	4.94%
South Coast	89,442	114,338	2.49%
LA County	393,747	563,006	3.64%
Orange County	202,511	275,530	3.13%
Riverside County	56,325	91,712	5.00%
San Bernardino	60,456	96,106	4.74%
San Diego County	171,353	233,050	3.12%
Imperial County	7,434	12,188	5.07%
CA Total	1,655,789	2,312,236	3.40%

* Funding needs based on regional compounded change rates

It is very likely that across all regions of the state the community colleges will need annual average enrollment growth funding of about 3.4 percent to fully meet student demand. Of the 16 regions shown, the Commission's analysis indicates that nearly half will need annual enrollment growth funding in excess of 3.4 percent, with the Imperial County Region, the Riverside County Region, the Central Coast Region, and the San Bernardino County Region leading the way.

The level of regional enrollment demand can be viewed in part as a function of three demographic factors: (1) the absolute size of a region's population; (2) projected changes in a region's population; and (3) and the proportion of a region's population that is enrolled in a community college, referred to as the participation rate. Display 4 on the next page shows the projected change in California's population by region and selected age-groups for the period 2004 and 2013.

Display 4 shows that although the Los Angeles Region is not projected to grow nearly as rapidly as the Riverside region, the population base of the Los Angeles Region is projected to be nearly 5 times as large as the Riverside population base by year 2013. Display 5 shows that in Fall 2002 there were 172 students ages 20 to 24 that were enrolled in a community college for every 1,000 residents of the Los Angeles Region ages 20 to 24, and there were 142 students of ages 15 to 19 enrolled for every 1,000 Los Angeles Region residents ages 15 to 19. These observations partially explain why this region is ex-

pected to account for about a quarter of the additional community college students projected between Fall 2003 and 2013.

DISPLAY 4 California Population Growth by Region and Selected Age-groups 2004 and 2013

REGION	YEAR	Total	Age-Group 15 - 19	20 - 29	30 - 49	50 - 65
Northern California	**2004**	799,677	97,265	167,414	304,486	230,512
	2013	877,478	86,469	216,715	299,659	274,635
Annual Change		1.04%	-1.30%	2.91%	-0.18%	1.97%
Sacramento	**2004**	1,375,684	161,009	280,466	600,397	333,812
	2013	1,705,316	184,364	369,650	677,019	474,283
Annual Change		2.42%	1.52%	3.12%	1.34%	3.98%
SF Bay - North	**2004**	879,160	89,830	159,544	374,762	255,024
	2013	963,131	90,817	206,796	346,547	318,971
Annual Change		1.02%	0.12%	2.92%	-0.87%	2.52%
SF Bay - East	**2004**	1,770,635	171,994	335,101	824,236	439,304
	2013	2,043,002	183,644	398,020	879,579	581,759
Annual Change		1.60%	0.73%	1.93%	0.72%	3.17%
SF Bay - Peninsula	**2004**	1,080,543	73,349	185,644	548,485	273,065
	2013	1,108,105	74,807	167,946	519,239	346,113
Annual Change		0.28%	0.22%	-1.11%	-0.61%	2.67%
SF Bay – South	**2004**	1,199,117	108,607	214,522	583,131	292,857
	2013	1,309,034	123,899	239,720	551,560	393,855
Annual Change		0.98%	1.47%	1.24%	-0.62%	3.35%
N. Central Valley	**2004**	1,117,713	147,465	242,035	466,677	261,536
	2013	1,383,898	158,930	337,639	530,606	356,723
Annual Change		2.40%	0.84%	3.77%	1.44%	3.51%
S. Central Valley	**2004**	1,417,999	188,856	335,565	589,793	303,785
	2013	1,655,448	186,395	415,411	640,118	413,524
Annual Change		1.74%	-0.15%	2.40%	0.91%	3.49%
Central Coast	**2004**	513,305	55,977	113,759	219,705	123,864
	2013	555,902	57,616	120,004	218,065	160,217
Annual Change		0.89%	0.32%	0.60%	-0.08%	2.90%
South Coast	**2004**	1,011,605	114,879	201,146	437,349	258,231
	2013	1,113,349	116,176	244,000	405,910	347,263
Annual Change		1.07%	0.12%	2.17%	-0.83%	3.35%

DISPLAY 4 (Continued)

REGION	YEAR	Total	Age-Group 15 - 19	20 - 29	30 - 49	50 - 65
Los Angeles	**2004**	6,733,482	709,359	1,373,691	3,098,964	1,551,468
	2013	7,232,665	767,503	1,514,894	2,899,846	2,050,422
Annual Change		0.80%	0.88%	1.09%	-0.74%	3.15%
Orange County	**2004**	2,082,236	210,993	415,428	966,351	489,464
	2013	2,325,796	231,459	481,795	952,539	660,003
Annual Change		1.24%	1.03%	1.66%	-0.16%	3.38%
Riverside County	**2004**	1,164,525	151,005	235,795	513,324	264,401
	2013	1,496,127	167,765	346,565	592,349	389,448
Annual Change		2.82%	1.18%	4.37%	1.60%	4.40%
San Bernardino County	**2004**	1,288,031	173,524	291,411	557,691	265,405
	2013	1,539,721	168,748	378,319	620,441	372,213
Annual Change		2.00%	-0.31%	2.94%	1.19%	3.83%
San Diego County	**2004**	2,131,100	220,696	521,342	927,565	461,497
	2013	2,382,049	194,860	508,135	1,043,391	635,663
Annual Change		1.24%	-1.37%	-0.28%	1.32%	3.62%
Imperial County	**2004**	104,941	14,684	22,063	46,752	21,442
	2013	126,702	13,213	31,610	49,603	32,276
Annual Change		2.12%	-1.17%	4.08%	0.66%	4.65%

In Display 5, the community college participation rate is expressed as the number of students enrolled fall 2002 per 1,000 residents of a particular age-group and region. By combining the information from Displays 4 and 5, it is possible to understand more clearly the influence of regional demographics on enrollment demand. For example, Display 4 shows that the 20-29 age-group is projected to grow at an annual average rate of about 4.5 percent in the Riverside County Region. From Display 5, in Fall 2002, 140 students of ages 20 to 24 were enrolled in a community college for every 1,000 regional residents ages 20 to 24, and there were 63 students enrolled per 1,000 regional residents ages 25 to 29. This information, combined with the observation that the present and projected population base of the region is rather substantial, and partially explains why the Commission is projecting enrollment demand in the Riverside County Region to increase at an annual average rate of nearly 4.3 percent.

DISPLAY 5 Community College Participation Rates by Region and Age Group per 1,000 Residents

REGION	Age Group				
	15-19	20-24	25-29	30-49	50-65
Northern California	170	162	88	49	37
Sacramento Area	161	192	88	49	30
SF Bay North	160	173	89	48	65
SF East Bay	171	176	75	38	28
SF Peninsula	168	229	95	59	73
SF South Bay	193	238	107	49	47
North Central Valley	119	128	59	32	25
South Central Valley	125	149	69	40	20
Central Coast	154	147	87	61	63
South Coast	209	218	101	50	53
LA County Region	142	172	75	38	24
Orange County Region	207	282	123	62	75
San Bernardino County Region	120	140	63	30	17
San Diego County Region	91	118	59	35	18
Imperial County Region	174	196	97	51	59
	134	218	91	45	18

Institutional Capacity Analysis

As a first step in estimating the current physical capacity of the community colleges in meeting enrollment demand, the Commission obtained from the Community College Chancellor's Office the current total assignable square (ASF) feet of lecture and laboratory space by district. The Commission aggregated the district data to the regional level, as shown in Display 6. The total amount of instructional classroom space currently ranges from a low of 74,315 ASF for the Imperial County Region to a high of 4.2 million ASF for the Los Angeles County Region. State-adopted space and utilization standards can be used to convert ASF physical capacity to Full-Time Equivalent Student Capacity (FTES). FTES capacity can then be compared directly to FTES enrollment demand to assess the ability of the State to accommodate student demand across diverse geographical regions.

With few exceptions, the standards require lecture classroom space to be in use 53 hours per week, out of a total possible usage of 70 hours. The standards also recommend that each student station average 15 ASF and be in use 66 percent time of the school week, excluding Saturdays. This means that every 100 ASF of lecture space will support about 15.54 FTES. Standards for laboratory are more complex, in that they allow for various levels of ASF per student station, depending on the discipline and course level (i.e., lower division, upper division, graduate). For the community colleges, for example, the standards call for 115 ASF per student station for an agricultural laboratory, whereas 200 ASF per student station is allowed for an auto-mechanic laboratory. Averaged over disciplines, every 100 ASF of laboratory space will support about 1.5 FTES.

DISPLAY 6 Current ASF of Lecture and Laboratory Space for California Community Colleges, by Region

Region	College Lecture ASF	College Lab ASF	Total
Northern	217,614	514,369	731,983
Sacramento	312,604	560,966	779,141
SF Bay - Peninsula	293,053	515,083	808,136
SF Bay - North	216,933	406,475	623,408
SF Bay - East	371,782	753,573	1,125,355
SF Bay - South	300,464	662,516	962,980
N. Central Valley	160,750	465,616	626,366
S. Central Valley	314,457	572,325	886,782
Central Coast	82,661	215,700	298,361
South Coast	341,299	539,644	880,943
LA County	1,447,611	2,791,811	4,239,422
Orange County	567,421	927,677	1,495,098
Riverside County	143,903	293,067	436,970
San Bernardino County	194,213	381,481	575,694
San Diego County	528,928	799,388	1,328,316
Imperial County	37,292	37,023	74,315

Source: Adapted from Community College Chancellor's office facility reports

In Display 7, regional FTES capacities are compared with regional FTES enrollment demand. Consistent with the Commission's 2001 findings, the need for capital outlay resources is substantial for the California Community College System, as its regional campuses struggle to accommodate a 40.0 percent increase in enrollment demand. For Fall 2005, substantial deficits exist in all but two regions—the Imperial County Region and the Northern California Region. By year 2013, the forecast indicates classroom deficits for all 16 regions, which translates to a combined 483,883 FTES capacity deficit statewide if the community college's physical plant is not expanded appreciably. By how much? Our analysis indicates the system's lecture and laboratory capacity will need to increase about 50 percent.

DISPLAY 7 Community College Capacity Analysis by Region

REGION	FTES Capacity 2005	Fall 2005 Projected FTES Demand	Fall 2005 FTES Capacity Surplus or Deficit	Fall 2013 Projected FTES Demand	Fall 2013 FTES Capacity Surplus or Deficit
Northern California	41,415	40,398	1,017	47,502	-6,087
Sacramento Area	56,860	70,073	-13,213	89,100	-32,240
SF Bay Peninsula	53,144	67,324	-14,180	78,423	-25,279
SF Bay North	39,713	46,668	-6,955	54,362	-14,649
SF East Bay Area	68,903	77,014	-8,111	89,711	-20,808
SF South Bay	56,477	64,009	-7,532	74,561	-18,084
North Central Valley	31,861	41,144	-9,283	52,728	-20,867
South Central Valley	57,316	59,965	-2,649	73,472	-16,156
Central Coast	16,032	30,519	-14,487	40,389	-24,357
South Coast	61,002	62,275	-1,273	74,091	-13,089
Los Angeles County	266,181	293,559	-27,378	364,265	-98,084
Orange County	101,869	150,738	-48,869	178,268	-76,399
Riverside County	26,690	42,151	-15,461	59,429	-32,739
San Bernardino County	35,814	45,044	-9,230	62,277	-26,463
San Diego County	93,991	125,133	-31,142	151,016	-57,025
Imperial County	6,341	5,476	865	7,898	-1,557
STATE TOTAL	1,013,609	1,221,490	-207,881	1,497,492	-483,883

Display 8 shows that public support for capital projects is strong. The *Community College League of California* announced that all 11 District Bond initiatives passed in the November 2004 election. Those bonds added $1.5 billion in construction funds for local campuses. The elections also pushed to $12.2 billion the total amount of general obligation bond funding that local district voters have approved since the enactment of *Proposition 39* in November 2000. Proposition 39 lowered the required voter-approval threshold from two-thirds to 55 percent.

DISPLAY 8 Community College District Bond Measures Approved November 2004

District	Amount	% Voter Approval
Antelope Valley	$139,000,000	69.4%
Copper Mountain	$19,720,000	71.7%
Imperial	$58,600,000	63.6%
Marin	$249,500,000	62.6%
Redwoods	$40,300,000	63.9%
San Jose-Evergreen	$185,000,000	64.9%
Santa Monica	$135,000,000	58.0%
Sierra SFID #1 (Tahoe Truckee)	$35,000,000	68.4%
Sierra SFID #2 (Western Nevada City)	$44,500,000	58.9%
West Valley-Mission	$235,000,000	59.5%
Yosemite	$326,000,000	60.0%
TOTAL	**$1,467,620,000**	

Recommendations

Although public support for community college capital construction projects remains strong, building new college campuses and off-campus centers must be viewed as only part of the solution—although a significant part. The Commission encourages the community colleges to continue to explore alternatives to expand access instead of bricks and mortar. The Commission supports:

- Expanding year-around operations and evening and weekend courses;
- Increasing the use of regional educational centers and joint intersegmental facilities, especially with local high schools;
- Expanding distributed learning opportunities to maximize student choice by making learning less dependent on physical space and location; and
- Supporting more productive learning environments that cause students to be more proficient learners so that they are able to realize their educational goals and aspirations more rapidly.

Appendix A: Technical Notes for Methodology B

An analytic process was used to update enrollment demand projections for regions that have now been disaggregated into smaller geographical areas. The challenge was to estimate the proportion of enrollment demand for a particular aggregated area that should be attributed to the new smaller regional designations. For example, how much of the community college demand within the previously designated San Bernardino-Riverside County Region should be attributed to San Bernardino County, and how much should reasonably be attributed to Riverside County.

The Commission carefully reviewed the most recent district-level projections developed by the Community College Chancellor's Office. By clustering the district projections into the Commission's original regions, it was possible to determine the proportion of demand for the San Bernardino-Riverside region that researchers at the Chancellor's Office were attributing to San Bernardino and Riverside counties individually for year 2010. The Commission used the proportions for year 2010 as a means to disaggregate enrollment demand for the San Bernardino-Riverside Region into separate regional estimates for year 2010. Annual average compounded change rates were derived using Fall 2002 actual enrollments as a baseline and the Commission's projections for year 2010 as an end point. The trend was continued through year 2013. In a similar fashion, the disaggregation process was applied to the San Diego-Imperial Region and the nine-county San Francisco Bay Area.